EMSL Analytical - Industrial Hygiene
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 /
http://www.EMSL.com IndustrialHygienelab@emsl.com

EMSL Order:	281802204
CustomerID:	SREC85
CustomerPO:	CC-031615
ProjectID:	

Attn: **Alex Green**
S&R Environmental Consulting, Inc.
5801 Logan Street, #200
Denver, CO 80216

Phone:	(303) 297-1645
Fax:	(303) 297-1646
Received:	05/15/18 10:50 AM
Analysis Date:	5/16/2018
Collected:	5/14/2018

Test Report: PM10 Analysis of Particulate Matter Performed by EPA Reference Method 40 CFR, Chapter I, Part 50, App. J

Sample	*Location*	*Volume (L)*	*Initial Weight (mg)*	*Final Weight (mg)*	*Sample Weight (mg)*	*Concentration (µg/m³)*	*Reporting Limit (µg/m³)*	*Notes*
18-0613	3rd Floor	2568	54.212	56.474	2.3	900	0.78	
281802204-0001								
18-0630	4th Floor	2432	59.842	60.258	0.42	170	0.82	
281802204-0002								

Notes: Discernable field blank not submitted with samples.
Results are not field blank corrected.

Analyst(s)

Thomas Cancglin (2)

Scott Van Etten, CIH, Laboratory Manager
or other approved signatory

Initial report from 05/16/2018 14:57:25

THIS IS THE LAST PAGE OF THE REPORT.

HMC #18014987

HAYES
MICROBIAL CONSULTING
3005 East Boundary Terrace, #F
Midlothian, VA 23112, USA
804.562.3435 Fax: 804.447.5562

contact@hayesmicrobial.com
http://hayesmicrobial.com/

Analysis Report prepared for

S&R Environmental Consulting

5801 Logan St. Suite 200
Denver, CO. 80216
Phone: (303) 297-1645

Job Number: 018013
Job Name: EPA/Boots
Date Sampled: 05-14-2018
Date Analyzed: 05-15-2018
Report Date: 05-15-2018

EPA Laboratory ID# VA01419

AIHA EMPAT Lab ID# 188863

Mold License: LAB1021

License: #PH-0198

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HMC #18014987

S&R Environmental Consulting
5801 Logan St.
Suite 200
Denver, CO 80216

May 15, 2018

Client Job Number: 018013
Client Job Name: EPA/Boots

Dear S&R Environmental Consulting,

We would like to thank you for trusting Hayes Microbial for your analytical needs. On May 15, 2018 we received 3 samples by FedEx for the job referenced above. 3 samples were received in good condition.

The results in this analysis pertain only to this job, collected on the stated date and should not be used in the interpretation of any other job. This report may not be duplicated, except in full, without the written consent of Hayes Microbial Consulting, LLC.

This laboratory bears no responsibility for sample collection activities, analytical method limitations, or your use of the test results. Interpretation and use of test results are your responsibility. Any reference to health effects or interpretation of mold levels is strictly the opinion of Hayes Microbial Consulting. In no event, shall Hayes Microbial Consulting or any of its employees be liable for lost profits or any special, incidental or consequential damages arising out of your use of the test results.

Stephen N. Hayes

Steve Hayes, BSMT(ASCP)
Laboratory Director
Hayes Microbial Consulting, LLC

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Particle Analysis

SOP #HMC114

HMC #18014987

Job Number:	**018013**	Job Name:	**EPA/Boots**	Date Collected:	**05/14/2018**
Collected by:	**Tom**			Date Received:	**05/15/2018**
Email:	**tom@srenvironmentalconsulting.com**			Date Reported:	**05/15/2018**

HMC ID Number	18014987 - 1	18014987 - 2	18014987 - 3
Sample ID#	2263151	2263129	2263150
Sample Name	3rd Floor	4th Floor	Entrance Main Lobby
Sample Volume	75 liters	75 liters	76 liters
Reporting Limit	13 Particles / m3	13 Particles / m3	13 Particles / m3

Particle	Raw Count	Count / m3	% of Total	Raw Count	Count / m3	% of Total	Raw Count	Count / m3	% of Total
Dander	240	3183	35.8%	60	792	50.4%	130	1711	73.1%
Cellulose Fibers	6	80	< 1%	3	40	2.5%	2	26	1.1%
Synthetic Fibers	1	13	< 1%				1	13	< 1%
Fiberglass Fibers									
Wood Fibers	1	13	< 1%						
Animal Hair									
Plant Hair									
Human Hair									
Dust Mites, Parts									
Carpet Beetle larvae parts									
Insect Parts									
Insect Frass (Feces)									
Feather Barbule									
Pollen									
Gypsum									
Opaque Particles									
Talc	420	5570	62.6%	55	726	46.2%	35	461	19.7%
Silicates	3	40	< 1%	1	13	< 1%	2	26	1.1%
Mineral Salts									
Ash-like Soot							5	66	2.8%
Char-like Soot							1	13	< 1%
Aciniform-like Soot							2	26	1.1%
Total	671	8899		119	1571		178	2342	

Signature: P. Ramesh **Date:** 05/15/2018 **Reviewed by:** Stephen N. Hayes **Date:** 05/15/2018

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Particle Information

HMC #18014987

Particle Analysis	Hayes Microbial Consulting Particle Analysis test is based on the initial screening procedures from ASTM #D6602. HMC only does light, polarized light, and phase contrast microscopy. No SEM or X-ray defraction is done. Below are some guidelines to help you figure out the totals for the dander, fibers, pollen, and other particle counts by light microscopy. *Estimated Normal Ranges are based on experience only. There are no standard ranges for this type of testing.

Particle		*** Estimated Normal Range**	
		Air	**Surface**
Dander	Home (Carpeted Areas)	1,000-6,000 / M3	10,000-16,000 / cm2
	Home (Hard Surface Areas)	500-5,000 / M3	5,000-16,000 / cm2
	Office or Classroom (Carpeted)	4,000-12,000 / M3	14,000-24,000 / cm2
	Office or Classroom (Hard Surface Areas)	3,000-10,000 / M3	12,000-20,000 / cm2
Cellulose Fibers		0-250 / M3	0-1,600 / cm2
Synthetic Fibers		0-250 / M3	0-1,600 / cm2
Fiberglass Fibers		0-60 / M3	0-400 / cm2
Gypsum Fibers		0-400 / M3	0-1,800 / cm2
Talc		0-250 / M3	0-2,000 / cm2
Dust Mites (parts)		0-30 / M3	0-200 / cm2
Insect Parts		0-30 / M3	0-200 / cm2
Animal Hair		0-30 / M3	0-200 / cm2
Wood Fibers		0-60 / M3	0-200 / cm2
Plant Hairs		0-60 / M3	0-200 / cm2
Human Hair		0-60 / M3	0-200 / cm2
Carpet Beetle Larvae		0-40 / M3	0-200 / cm2
Insect Frass		0-40 / M3	0-400 / cm2
Feather Barbules		0-40 / M3	0-200 / cm2
Opaque Particles		0-100 / M3	0-600 / cm2
Starch		0-40 / M3	0-200 / cm2
Ash-like Soot		0-60 / M3	0-400 / cm2
Char-like Soot		0-60 / M3	0-200 / cm2
Aciniform-like Soot		0-100 / M3	0-800 / cm2
Silicates	(Varies greatly depending on area)	0-500 / M3	0-2,800 / cm2
Pollen	Varies with outdoor pollen levels and whether there are live indoor plants.		
		M3 = per cubic meter	cm2 = per sq. centimeter

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Aciniform-like Soot

Description: Also known as black carbon, aciniform soot comes from the combustion of oil based or hydrocarbon containing materials. This type of soot should not be confused with Carbon Black, which is a manufactured product that has been used in commerce for over a century and consists of a fine black powder of nearly pure elemental carbon.

Sources: Sources are from the combustion of waste oil, fuel oil, gasoline fuel, diesel fuel, coal, coal-tar pitch, oil shale, rubber, plastics and resins, natural gas fireplaces and stoves, candles etc.

Ash-like Soot

Description: Ash-like soot is formed from the combustion of wood products.

Sources: Sources are wood fireplaces, house fires, forest fires, and burning of leaves and other yard debris.

Cellulose Fibers

Description: Cellulose fibers are natural fibers from plant material.

Sources: Sources of cellulose fibers are paper, cardboard, insulation material.

Char-like Soot

Description: Char-like soot comes from the incomplete combustion of wood products.

Sources: Sources are wood fireplaces, house fires, forest fires, and burning of leaves and other yard debris.

Dander

Description: Dander is dead skin cells. The average person sheds about 600,000 skin cells per day.

Sources: Sources are people and animals.

Silicates

Description: Silicates comprise the majority of the Earth's crust. Sand, Portland cement, and thousands of minerals are examples of silicates.

Sources: Sources are sand and cement.

Synthetic Fibers

Description: Synthetic fibers are man-made fibers such as nylon, polyester, and polyolefin.

Sources: Sources of synthetic fibers are carpet, upholstery and clothing.

Talc

Description: Talc is a mineral composed of hydrated magnesium silicate

Sources: Sources of talc are powder, personal hygiene and cosmetics products, and in powdered laundry detergents and carpet cleaners.

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Particle Descriptions

HMC #18014987

Wood Fibers

Description: Fibers from woody plants, trees, and lumber.

Sources: Wood and wood products.